REMARKS

This is a CPA of co-pending U.S. Patent Application Serial No. 09/470,741 filed December 20, 1999. Reconsideration and allowance of the subject CPA, as amended, are respectfully requested.

At the outset, the undersigned attorney would like to thank the Examiner for the courtesy extended to the undersigned attorney during the interview held on August 26, 2002. The independent claims of the subject CPA have been amended in the manner suggested by the Examiner in the aforesaid interview, to clarify the claimed subject matter by making explicit in the independent claims the definition found in the Specification of the term "motion vector" used in these claims. As was acknowledged by the Examiner in the aforesaid interview, these claim amendments clearly distinguish the claimed subject matter over the prior art of record, including the prior art relied upon by the Examiner in the Final Office Action mailed May 22, 2002 (hereinafter, "the Final Office Action"). Support for these claim amendments can be found in the Specification at page 9, lines 3-5. No new matter is believed to have been added to the subject CPA as a result of the changes made thereto.

In the Final Office Action, the Examiner rejected combinations of the claims under 35 USC 103 as being rendered obvious by various combinations of Vetro et al. ("Frequency Domain Down-Conversion of HDTV Using an Optimal Motion Compensation Scheme," Journal of Imaging Systems and Technology, Vol. 9, No. 4, August 1998, pp. 274-282), Ng (U.S. Patent No. 5,262,854), Dugad et al. ("A Fast Scheme for Altering Resolution in the Compressed Domain," IEEE Computer Science Conference on Computer Vision and Pattern Recognition, June 1999, pp. 213 - 218), Kim et al. (U.S. Patent No. 6,175,592), and/or Rosman et al. (U.S. Patent No. 6,222,550). Applicants respectfully submit that the claims, as amended, are patentably distinguished over these combinations of prior art.

Vetro et al. discloses techniques for down conversion for use in a down conversion decoder, and motion compensation schemes that are dependent upon the particular technique of down conversion that is used. In pertinent part, Vetro et al. teaches different processing schemes that involve down conversion and motion compensation. Significantly, as was acknowledged by the Examiner in the aforesaid interview, Vetro et al. does not disclose or suggest "performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock," as is required in Applicants' independent claims. (See, independent claims 1, 16, 28, and 32).

Ng discloses that 8 by 8 blocks of data from VRAM are decimated by a decimator down to 4 by 4 blocks, and these 4 by 4 blocks are supplied to an adder in accordance with the data format of inverse transform image data applied to the adder from another decimator. (See, Ng, column 6, line 65 to column 6, line 7; See also, Ng's Figure 5).[1]

Also in Ng, a motion compensated predictor receives "motion vectors" (as the term "motion vectors" is defined and used in Ng) and accesses blocks of pixel data at addresses in VRAM identified by such "motion vectors." See, e.g., Ng, column 3, line 64 to column 4, line 18, column 5, lines 38 to 64). As defined and used in Ng:

> Motion vectors . . . are codewords which identify 8 by 8 blocks of pixels in frames from which predicted frames are generated, which blocks most closely match the block currently being processed in the frame currently being encoded. (Ng, column 4, lines 34-39).

In contrast to Vetro et al., the method of Applicants' claim 1 comprises:

> downsampling a compressed video image in the frequency domain;
> inverse transforming the downsampled video image; and
> performing motion compensation for the downsampled image in the

[1] In the Final Office Action, the Examiner asserted that Ng "inherently" discloses an article comprising a storage medium having stored thereon instructions of the type described in claims 28 and 32, because "the controller 302, as a state machine, is inherently [deemed] to have a storage medium storing the program (instructions) executed by a platform because of the programming routines." (Final Office Action, page 7). Applicants previously traversed these assertions, based upon MPEP 2112, and requested that the Examiner either withdraw these assertions or provide evidence (e.g., via personal affidavit or prior art reference) to prove that the subject matter asserted by the Examiner to be inherently disclosed in Ng necessarily must be present in Ng's disclosed arrangement. The Examiner has provided no such evidence. Once again, pursuant to MPEP 2112, Applicants respectfully traverse these assertions by the Examiner, and request that the Examiner provide such evidence or withdraw these assertions.

spatial domain, the performing of the motion compensation comprising scaling a motion vector in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock. (Independent claim 1, as amended).

Also in contrast to Vetro et al., the method of Applicants' claim 16 comprises:

> inverse transforming a compressed video image;
> downsampling the inverse transformed image in the spatial domain; and
> performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock. (Independent claim 16, as amended).

Independent claims 28 and 32, as amended, recite, respectively, the above language recited in independent claims 1 and 16, as amended. As was acknowledged by the Examiner in the aforesaid interview, given this fundamental difference between Applicants' claims, as amended, and Ng's disclosure, it simply cannot be said that Ng discloses or suggests the aforesaid features of the claimed invention that are missing from Vetro et al., namely, "performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock." (See independent claims 1, 16, 28, and 32).

It is not seen that Dugad et al., Kim et al., and/or Rosman et al. overcome these deficiencies of Vetro et al. and Ng so as to suggest, when taken in combination with Vetro et al. and Ng, Applicants' claimed invention. Dugad et al. is cited by the Examiner as disclosing the use of a bilinear interpolation scheme for downsampling. Kim et al. is cited by the Examiner as disclosing the display of a downsampled spatial image such that the resulting non-uniform vertical spacing of data signal lines appear substantially uniform on a low resolution monitor screen, and Rosman et al. is cited by the Examiner as disclosing use of a 3D pipeline to perform bilinear interpolation. Even assuming, *arguendo*, that Dugad et al., Kim et al., and Rosman et al. disclose these features in the manner contemplated by the Examiner, none of these references can

be said to supply the aforesaid features of Applicants' claimed invention that are missing from Vetro et al. and Ng.

Thus, it is respectfully submitted that no combination of Vetro et al., Ng, Dugad et al., Kim et al. and Rosman et al. renders obvious the claims, as amended. Thus, it is respectfully submitted that the Examiner's rejections in the Final Office Action of combinations of the claims, as amended, under 35 USC 103 as being rendered obvious by various combinations of Vetro et al., Ng, Dugad et al., Kim et al., and Rosman et al. have been overcome.

Quite apart from the foregoing, the Final Office Action does not contain any acknowledgement from the Examiner that the Examiner has considered the references cited in the Information Disclosure Statement that was mailed by Applicants on September 7, 2001 to the United States Patent & Trademark Office. Applicants respectfully request that the Examiner consider and make of record these references in the Examiner's next communication to Applicants.

In the event that the Examiner deems personal contact desirable in further disposition of this case, the Examiner is invited to call the undersigned attorney at 508-865-4168.

Please charge any shortages and credit any overcharges to Deposit Account number 02-2666.

Respectfully submitted,

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MARKED-UP VERSION OF THE CLAIMS TO SHOWN CHANGES MADE

Claims 1, 16, 28, and 32 have been rewritten, as follows:

1 (Twice Amended). A method of performing video image decoding comprising:

downsampling a compressed video image in the frequency domain;

inverse transforming the downsampled video image; and

performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector [vectors] in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock.

16 (Twice Amended). A method of performing video image decoding comprising:

inverse transforming a compressed video image;

downsampling the inverse transformed image in the spatial domain; and

performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector [vectors] in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock.

28 (Twice Amended). An article comprising: a storage medium, having stored thereon instructions, that when executed by a platform, result in the following:

downsampling a compressed video image in the frequency domain;

inverse transforming the downsampled video image; and

performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector [vectors] in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock.

32 (Twice Amended). An article comprising: a storage medium, having stored thereon instructions, that when executed by a platform, result in the following:

inverse transforming a compressed video image;

downsampling the inverse transformed image in the spatial domain; and

performing motion compensation for the downsampled image in the spatial domain, the performing of the motion compensation comprising scaling a motion vector [vectors] in accordance with a downsampling ratio, the motion vector specifying relative distance of reference data from a macroblock.